

REPORT DOCUMENTATION PAGE		FORM APPROVED - - - OMB NO. 0704-0188	
<small>PUBLIC REPORTING BURDEN FOR THIS COLLECTION OF INFORMATION IS ESTIMATED TO AVERAGE 1 HOUR PER RESPONSE, INCLUDING THE TIME FOR REVIEWING INSTRUCTIONS, SEARCHING EXISTING DATA SOURCES, GATHERING AND MAINTAINING THE DATA NEEDED, AND COMPLETING AND REVIEWING THE COLLECTION OF INFORMATION. SEND COMMENTS REGARDING THIS BURDEN ESTIMATE OR ANY OTHER ASPECT OF THIS COLLECTION OF INFORMATION, INCLUDING SUGGESTIONS FOR REDUCING THIS BURDEN, TO WASHINGTON HEADQUARTERS SERVICES, DIRECTORATE FOR INFORMATION OPERATIONS AND REPORTS, 1215 JEFFERSON DAVIS HIGHWAY, SUITE 1204, ARLINGTON, VA 22202-4302, AND TO THE OFFICE OF MANAGEMENT AND BUDGET, PAPERWORK REDUCTION PROJECT (0704-0188), WASHINGTON, DC 20503</small>			
1. AGENCY USE ONLY (LEAVE BLANK)	2. REPORT DATE 22 MAR 2013	3. REPORT TYPE AND DATES COVERED STUDENT RESEARCH PAPER	
4. TITLE AND SUBTITLE THE EVOLUTION OF THE NAVY SUPPLY CORPS AND ITS ROLE IN FUTURE OPERATIONS		5. FUNDING NUMBERS N/A	
6. AUTHOR(S) MICHAEL L. TUCKER, LCDR, SC, USN			
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) USMC COMMAND AND STAFF COLLEGE 2076 SOUTH STREET, MCCDC, QUANTICO, VA 22134-5068		8. PERFORMING ORGANIZATION REPORT NUMBER NONE	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) SAME AS #7.		10. SPONSORING/MONITORING AGENCY REPORT NUMBER: NONE	
11. SUPPLEMENTARY NOTES NONE			
12A. DISTRIBUTION/AVAILABILITY STATEMENT NO RESTRICTIONS		12B. DISTRIBUTION CODE N/A	
ABSTRACT (MAXIMUM 200 WORDS)			
14. SUBJECT TERMS (KEY WORDS ON WHICH TO PERFORM SEARCH)		15. NUMBER OF PAGES. 22	
		16. PRICE CODE: N/A	
17. SECURITY CLASSIFICATION OF REPORT UNCLASSIFIED	18. SECURITY CLASSIFICATION OF THIS PAGE: UNCLASSIFIED	19. SECURITY CLASSIFICATION OF ABSTRACT UNCLASSIFIED	20. LIMITATION OF ABSTRACT

*United States Marine Corps
Command and Staff College
Marine Corps University
2076 South Street
Marine Corps Combat Development Command
Quantico, Virginia 22134-5068*

MASTER OF MILITARY STUDIES

TITLE:

**THE EVOLUTION OF THE NAVY SUPPLY CORPS
AND ITS ROLE IN FUTURE OPERATIONS**

SUBMITTED IN PARTIAL FULFILLMENT
OF THE REQUIREMENTS FOR THE DEGREE OF
MASTER OF MILITARY STUDIES

AUTHOR:

LCDR MICHAEL L. TUCKER, SC, USN

AY 12-13

Mentor and Oral Defense Committee Member: Craig Swanson PhD

Approved: [Signature]

Date: 25 April 2013

Oral Defense Committee Member: John Dobbs Lt Col USMC

Approved: [Signature]

Date: 25 April 13

Executive Summary

Title: The Evolution of the Navy Supply Corps and Its Role in Future Operations

Author: LCDR Michael L. Tucker, SC, United States Navy

Thesis: Naval Supply Corps has been present since the establishment of the Navy and through its evolution it remains the key to any successful operation in which naval support is required.

Discussion: From 1775 to present day and looking forward, the United States Navy has played and will play a vital role in the nation's defense and protection of national interests. As the United States of America has progressed from colonies seeking independence to a global superpower, her Navy has also experienced evolution but the logistics mission remains constant. Providing the Navy and its sister services sustainability during operations is the core mission of the Supply Corps. The contributions of the professionals are often noted informally, but formal accolades usually fall upon the more glamorous positions such as combatant commanders and aviators. The security environment is ever changing. Structuring the military force to combat the threats of tomorrow requires great consideration. It is imperative that Navy Supply Corps' capabilities grow in parallel. Leveraging joint capabilities and providing expeditionary options represents the strategic direction of the United States military. Naval Supply will play a vital role in that strategy.

Conclusion: The capabilities of the Navy Supply Corps will contribute to the success of the National Security and Defense Strategies. The successful innovations in joint, expeditionary logistics coupled with the continued study and implementation of Supply Chain Management practices greatly enhances the Navy Supply Corps outlook for future operations.

DISCLAIMER

THE OPINIONS AND CONCLUSIONS EXPRESSED HEREIN ARE THOSE OF THE INDIVIDUAL STUDENT AUTHOR AND DO NOT NECESSARILY REPRESENT THE VIEWS OF EITHER THE MARINE CORPS COMMAND AND STAFF COLLEGE OR ANY OTHER GOVERNMENTAL AGENCY. REFERENCES TO THIS STUDY SHOULD INCLUDE THE FOREGOING STATEMENT.

QUOTATION FROM, ABSTRACTION FROM, OR REPRODUCTION OF ALL OR ANY PART OF THIS DOCUMENT IS PERMITTED PROVIDED PROPER ACKNOWLEDGEMENT IS MADE.

Table of Contents

	Page
Disclaimer	ii
Preface.....	iv
Introduction.....	1
In The Beginning	3
Supporting a Growing Navy	6
Navy Supply Through Two World Wars.....	11
Supporting the 21 st Century and Beyond	13
Joint Logistics	14
Expeditionary Logistics and Maritime Prepositioning	16
Force to Capability Balance.....	18
Conclusion	21
Citations and Endnotes	23
Bibliography	25

Preface

The detailed history of Naval Supply Corps is a story that is often untold. In the light of battleship commanders, top gun aviator pilots and such, the toiles of the ones providing the behind the scene support to the warfighter goes without notice. Very little is glamorous about the life of a Supply Officer, yet the job carries great responsibility that if improperly managed it can result in mission failure. The Supply Officer has evolved from a contractor, previously referred to as a purveyor, and guest aboard naval vessels to an integrated member of the ship's crew. From there, the Supply Officers has been embedded at the strategic levels and higher staff positions providing guidance on how the corps will align with the force structure tomorrow's Navy.

This paper looks at the impact history played on the Navy and how the Supply Corps has evolved to support the mission. As we assess the security concerns of tomorrow, it is imperative to match the logistic capabilities with the growing needs of the nations. The requirement to operate under extreme fiscal constraints demands that the Supply Corps function as efficiently as possible to preserve vital resources. Looking forward to the future, it is vital that we remember our roots as businessmen. Building on the experience as Sailors and expanding on the knowledge of businessmen and women, the Supply Corps stands ready for sea.

Introduction

Admiral Raymond A. Spruance, who commanded Task Force 16 from his flagship USS *Enterprise* during the Battle of Midway, along with many others realized the importance of adequate logistics planning and execution. From his own experiences he would state, “a sound logistics plan is the foundation upon which a war operation should be based. If the necessary minimum of logistics support cannot be given to the combatant forces involved, the operation may fail, or at best be only partially successful.”¹ While the quote was in reference to the operational level, the same analysis can be applied to the strategic and tactical levels. It can further be assessed that any successful naval operation depends greatly on the capability of the logistic support system to sustain its forces. If one takes the Clausewitzian approach, it can be accessed that the nature of naval supply is constant, however the characteristics in which this corps of professionals operate are ever changing. As the United States of America has progressed from colonies seeking independence to a global super power, her Navy has also experienced evolution but the logistics mission remains constant. Not only has Navy Supply Corps been present throughout history, but also in order for the United States to be successful in achieving its defense strategy, the Corps’ ability to adapt and remain relevant to the security environment of today and in the future is paramount.

In order to understand naval supply one must first define the term. Also, it is important to mention that the Navy uses the terms supply and logistics interchangeably. The *Joint Publication 1-02* does not make distinction between the services specifics of logistics or supply but simply defines supply as the procurement, distribution, maintenance while in storage, and salvage of supplies, including the determination of kind and quantity of supplies.² Logistics is defined in depth as the planning and executing the movement and support of forces. The definition goes

further to say logistics includes those aspects of military operations that deal with the following:

- a. Design and development, acquisition, storage, movement, distribution, maintenance, evacuation, and disposition of materiel.
- b. Movement, evacuation, and hospitalization of personnel.
- c. Acquisition or construction, maintenance, operation, and disposition of facilities.
- d. Acquisition or furnishing of services.³

Therefore, by examining the two definitions it can be derived that naval supply is an all-inclusive term that encompasses a full range of support to naval operations from the cradle to the grave. From the initial planning and requisitioning before construction to the salvage and reutilization after decommissioning, the Navy Supply Corps plays a vital role.

The Navy Supply Corps is rich in history, a history directly relate to that our great country.⁴ The Corps has evolved tremendously over this time span of over 217 years. It is difficult to denote each historical event that helped shape the Supply Corps as it is identified today, but major achievements and progression can be partitioned in four general time periods. As the role of the Navy and thus its Supply Corps are directly related to the national requirements, these times periods correlate with significant historical events and innovations of the era. The first distinct stage must examine the origins in 1775. The second momentous period for the Navy Supply Corps links directly with the growth of a mighty navy during the 1800's to early 1900's. The innovations and demands achieved during the two World Wars represents the third timeframe. Finally, the Navy Supply Corps posture as it continues and prepares to support the United States' defense strategy including combating unconventional wars and operating jointly and efficiently as the nation faces the uncertain security environments of the future.

In the Beginning

Officially the United States Navy Supply Corps dates its origin with Tench Francis' appointment from President George Washington as the first purveyor. This appointment came after the Naval Armament Act of 1794 was passed which authorized the construction and manning of the first six frigates.⁵ However, the Navy Supply Corps can further trace its history back to 1775 when the Continental Congress established a Marine Committee. The committee was comprised of representatives from each of the 13 colonies and charged with supervising the construction of warships within their respective ports and acquisition of supplies required to outfit the ships. Deficiencies were highlighted when Captain John Paul Jones protested the level of support he was receiving in regards to the construction and equipage of the frigate *Ranger*. In compliance with the Marine Committee orders, Colonel John Langdon was tasked with supervising the construction and outfitting of the *Ranger*. Jones' emphasis of quality assurance, carrying the correct spares, crew support led to the establishment of the Board of Admiralty. The board was tasked to keep accounts; make proper entries; obtain regular and exact returns of all naval war stores, clothing, provisions, and report to Congress.⁶

At a time when the recognition of naval importance was minute, the authority enjoyed by the board was minimal. Precedence was placed on the matters of direct warfighting. There was little to no motivation for adhering to the meticulous detail required to document transactions. Enforcing subordinate clerks became a losing battle. To add to the complexity, procedures at sea were deemed more strenuous. The pursers afloat were expected to create the same amount of documentation for each transaction as their shore counterparts. Although simple in concept, the task proved difficult because transactions at sea were occurring literally in the thousands. Therefore unable to fully acquire the assistance required to carry out its tasks, the board had to

tend to many of the accounts themselves. The administrative burden caused the resignation of many agents and others were relieved for failing to render accounts as prescribed by Congress. By 1781, the remaining members of the Board of Admiralty resigned.⁷

By 1783 the need to establish a permanent Navy was becoming realized by the Continental Congress. However, there existed major problems in fulfilling this requirement. For starters, there was a scarcity of available funds to finance the construction of ships, docks, and naval arsenals, or for the support necessary for a permanent and credible presence at sea.⁸ Additionally, Congress was heavily engaged with other separate national financial matters. Then to increase to the growing complexity of Navy business practices, there were countless discrepancies with accountability. The level of training that Navy agents possessed varied. As such the bookkeeping practices from one to the next left several gaps. With the state of the available records, it was seemingly impossible to conduct a valid and thorough audit. Many accounts were behind in payment and it was difficult to obtain the proper public vouchers to settle the matters. In October 1783, John Paul Jones wrote to Robert Morris, the then Agent of Marine, that the crew of the *Bonhomme Richard* had not been paid for four years.⁹

The ability to outsource naval activities also competed with the true requirement of a permanent navy. Privateers had proven instrumental in the Revolution. Although the raids of these vessels were not designed to protect the American coast and its trade, it greatly decreased pressures upon them by forcing the British to scatter their fleets in escort work and trade protection.¹⁰ The lucrative profits afforded to their owners and crews created an appealing recruitment market. Experienced Sailors of the Navy who were subject to strict rules and receiving lesser pay or even denied pay could easier view the privateers as a means of earning a living.

After much debate, the Continental Congress moved forward with establishing a permanent Navy in 1783. Although the 13 new states were gradual to realize the united dependency of the Navy, they found themselves in a new position. The common interest of trade routes and merchant vessels at sea affected all states. The ability to project a presence at sea was now a national interest. They appointed a committee to research the funding requirements. Working with Robert Morris, the authorization was granted to construct 13 new frigates.

In light of the accountability issues, the Congress also recognized the growing need for professional business managers afloat. The roles of pursers were already established in the more mature navies such as Britain and France. Therefore, it was natural for the Continental Navy to adopt the function and title for practicality. They were in place not only to ensure proper record keeping of transactions but also to facilitate the logistical support for the ship's material requirements. Another function the early pursers oversaw was the implementation and operation of the ship's store. The new concept was in place to provide the crew a means to obtain basic items needed while at sea. The ship's store sold articles of clothing, candles, and other personal items of comfort to the crew.

Pursers received less pay than regular line officers. The difference in salaries inadvertently created division. The perceived prestige that line officers enjoyed over their purser counterparts hindered any *esprit de corps*. To widen the gap of camaraderie and devotion, the profits earned on the sale of goods went to subsidize the pursers' pay. It is easy to see how the idea of how much profit was being generated became an issue of debate. Even though there were limits as to the markup applied to items sold in the ship's store, many questioned the practices. There was always the thought that the pursers, which was ultimately operating and monopolized market, would markup the prices and take advantage of the crew. Eventually congressional legislation

was generated that further defined the limitation of pursers' profits to one percent of the monies they distributed. This law provided the basis for more intrusive oversight of military budgets. By 1809, the House of Representatives appointed a special committee to investigate the execution of funds. The investigation was primarily aimed at the Navy pursers' and Army paymasters' profit from sales but also drew attention to other areas such as extra allowance made to officers and principles upon which accounts were settled. Some viewed the investigation as a "fishing expedition" in search of evidence to embarrass President James Madison, Treasury Secretary Albert Gallatin, and former Secretary of the Navy Robert Smith.¹¹ Nevertheless, this type of scrutiny furthered the cause for professional business practices within the Navy Supply Corps.

Supporting a Growing Navy

In 1800, the first navy yards were established in Washington, DC and Portsmouth, New Hampshire. Then in 1801, yards were erected in Philadelphia, New York, Boston, and Norfolk. These new facilities marked great strides in positive direction for providing support for the naval fleet in multiple locations. However as Navy logistics were able to make one step forward it would face new challenges that appears to keep them a step behind. Typical peacetime drawdowns hit the Navy fleet hard. In 1801, Congress authorized the president to sell all but 13 of its Navy vessels. Of that 13, six were to remain in commission. Also, as part of the drawdown, all commissioned officers and pursers were discharged from service. As history will reveal, saving a few dollars on the front end by downsizing can cost tremendous secondary and tertiary expenses in the long run. This was the case when Tripoli declared war on the United States this same year. In response, President Thomas Jefferson ordered a squadron of ships to display a forward presence of force.

The Tripolitan War or the Barbary Coast War as it was called, lasted from 1801-1805. However, the invaluable lessons learned by Naval logistics live today. The small dispatched squadron that was assigned the forward presence and defense mission learned first-hand the difficulties in operating at great distances from home port. The importance of sustainability can be the deciding factor in any extended conflict. At the time, American Navy ships were not able to enter many foreign ports and resupply. The squadron's operations were lasting longer than the basic load of commodities could support. This challenge presented an opportunity to showcase the innovative spirit of Naval Supply. As a result, the first underway replenishment at sea was conducted in 1804 when the ketch *Intrepid* resupplied Commodore Edward Prebles's forces off Tripoli with provisions, clothing, and ammunition.¹² The expeditionary show of logistics enabled Preble to continue his blockade and deter the threats of the Barbary Coast states. This also gave testament not only to the United States ability to project power across the oceans, but her ability to sustain those forces independently. It was evident that the United States was quickly emerging as an international presence and ready to make her mark on global trade.

In 1814 the Navy underwent reorganization and expansion under the newly appointed Secretary of the Navy, Benjamin W Crowninshield. His wealth of experience at sea coupled with his skills as businessman made his appointment a major step forward for the Navy, but equally or more importantly the Supply Corps. Even though the United States had accomplished success in the War of 1812 just two years prior to his appointment, the Navy's inefficiencies were evident and partially contributed to the inexperienced civilian secretaries. Under the new Secretary of the Navy, a Board of Commissioners was established consisting of senior naval officers. They were responsible for all logistical functions, including procuring naval stores, and supplies and for constructing, arming, equipping and deploying warships.¹³ These strides forward paved the way

for a new era in naval history and also created administrative challenges. Congressional legislation required an enormous amount of micromanagement of all purveyors. By 1812 legislation was in place to make an appointment of a purser subject to the approval of the Senate. Throughout the course of time many committees had to be formed just to investigate a suspicion of unethical practices. From the various committee reports and records submitted by the Navy's clerks, Congress eventually enacted legislation to eliminate the office of Purveyor of Public Supplies and delegate its duties to each separate governmental agency, including the departments of War and Navy.

As the United States continued to expand her role globally, the requirement to protect national interests increased and thus required more naval capabilities. The expansion of the area of operations challenged the existing logistical system. Supply support had to be aligned with the evolution of the Navy. As other countries such as France and Great Britain already possessed steam-powered vessels, Congress eventually authorized the construction of the *Missouri* and *Mississippi* in 1839. Fear of war with Great Britain gave justification for expanding a steam-powered navy.

With the responsibility of the pursers residing solely on the department, the Navy sought to solicit mature and well-educated individuals for role. They were college graduates and an average of five years older than their line officer colleagues. The requirement to not only understand and operate within regulation but also possess the versatility to be resourceful when situations dictated was a common trait among purveyors of that era. The duties and responsibilities entrusted to these men were parallel to today's Supply Officers afloat and consisted of procuring, stowing, dispensing, and providing account for food, clothing, and the pay of officers and men. At one point, the idea of merging the storekeeper role with the pursers

was discussed. However, after much refutation from the storekeepers the proposal was dismissed.

By the early 1860s, the United States was a potential power in global affairs. However, domestic problems existed with the succession of Southern states. Although, most of the fighting during the Civil War was conducted on land, the Navy played a key role in the Union's strategy. In an effort to bring the Confederacy back in to the Union with minimum casualties, the Anaconda Plan that was implemented by the Lincoln administration. The plan relied on the coastline blockade of Confederate states and achieving naval superiority of the Mississippi River. Logistically sustaining its fleet was challenge the Union Navy Supply Officers faced. Without the critical supply chain infrastructure in place, the blockade was essentially ineffective. Building on the experience gained at Tripoli, the Union knew they could conduct underway replenishments. However, they also looked for additional innovative solutions to the logistics problem. The operation of Southern depots and stations helped build a supply chain system capable of sustaining the blockade squadron. These bases stocked and issued ordinance, provision, coal and naval stores and were equipped to repair naval vessels.¹⁴ The blockade and bases seizures also served as a means of denying the Southern states freedom to such resources. Additionally, the U.S. Navy was experimenting with the utilization of refrigerated ships during the Civil War era. These commercial supply ships would deliver fresh meat, fruits, and vegetables to the fleet and return to their respective homeports for another load of goods before debarking for the next replenishment mission. The success achieved by the experiment warranted immediate implementation and the ships functioned with great frequency. The supply ship practice has been refined slightly through the years but still a vital part of successful naval operations.

After the Civil War, as with all conflicts, the peacetime reductions of war assets were imposed to the armed forces. And the Navy was certainly not immune to the budgetary drawdowns. By 1881, the actual number of commissioned ships in the fleet had declined from over 200 to approximately 50 vessels.¹⁵ As a naval power, the U.S. Navy ranked twelfth. The scarcity of resources also affected the fleet's ability to maintain existing naval assets. Ironside ships were subject to experience complete lack of maintenance and fall victim to rust. After observing the other navies' continuance of evolving sea power, the need to modernize the U.S. Navy was evident. Under President James Garfield, a plan was proposed to construct 68 modern armored steam-propelled vessels. Although he was assassinated prior to seeing this modern sea power realized, his successor, Chester A. Arthur proceeded with the plan.

Supporting a heavier fleet presented yet more opportunities for paymasters, previously referred to as purveyors, afloat. The ships required a vast amount of coal to operate. This logistical constraint became even more evident during the Spanish American War from April to August of 1898. The American naval forces expended coal far above the rate at which it could be replenished by the existing supply channels. The scout squadron each burned 75 to 100 tons of coal per day. Operating over 1000 miles from their homeport in Hampton Roads, the ships were relying primarily upon one small collier, the *Nanshan*, for replenishments at sea. Not only was the small collier limited in cargo space, but also conducting the time consuming underway replenishments were often hindered by high seas. During those conditions it was hazardous for the small supply ship to operate along side the larger combat vessels. The squadron was able to continue its mission through strategic cooperation between the paymasters and the captains. Through proper communication the logistical situation was realized and the captains operated their vessels at slow speeds to conserve fuel. After reaching an advance supply station located in

Key West, the ships were able to refuel and carry out their mission. Additionally, the forward thinking of Paymaster General Stewart contributed to the squadron's ability to function efficiently on limited resources. During peacetime, he devised a standard allowance list for the ships to be loaded with based on average consumption. This tool would later evolve into what is now referred to as the Consolidated Allowance List (COSAL). Through the innovativeness and resourcefulness of the Supply Corps, the small squadron was successful and contributed to defeat of Spanish forces. Cuba was able to declare its independence from Spain and the United States acquired Puerto Rico, Guam, and the Philippines. The victory also demonstrated the will and ability of the U.S. Navy and established it as a world sea power.

Navy Supply Through Two World Wars

"In order to be a powerful nation, you must have a powerful Navy"
-Alfred Thayer Mahan

The innovation the Navy experienced during, between, and after the two world wars, stimulated the Supply Corps to evolve beyond any possible foreseen institution. The ship construction plan fluctuated due to financial constraints, policy, and desired capability, but the numbers of ships ultimately increased. The rapidly growing Navy of this time frame strained the existing logistic system and promoted new ideas to fill the needs of its fighting forces. From the World War I frame of operations, naval strategy depended on the use of battleships and battlecruisers as the capital ships. However, during the interwar period new theories arose as to what type vessel presented the most relevant and sufficient combat force. It was long respected that the battleship was the center of the fleet. Aircraft and aircraft carriers were used primarily as supportive vessels. Their tasks were to do reconnaissance by exploring the area and gather the vital information such as enemy size and location. That information would then be relayed the

battleship commanders so they could engage in intense battle. There were many who visualized the potential capabilities of Naval Aviation and the use of carriers as more offensive assets. The amount of emphasis placed on determining the appropriate mix of surface combatants, carriers, and aircraft greatly overshadowed the assessment of the service fleet required in support.

The events of World War II and the actions of the Pacific Service Command most notably shaped Navy Supply Corps. Although the planners of those days anticipated war with Japan, they did not foresee an immediate loss of 50 percent of fighting vessels prior to entering battle. In fact War Plan Orange evolved from a series of war plans were created to address possible conflict with Japan. The plan imagined a war heavily enacted by battleship operations. The Navy demonstrated great flexibility in the way it fought the war in the Pacific by leverage all her assets including carriers and naval aviation. The logistic support system displayed equal adaptability as it addressed each challenge of supporting the operating forces of various platforms and services in waters thousands of miles from home shores. As a result, many logistic practices were developed and implemented that is still in practice today such as replenishment at sea. Although the concept was not new, many opposed the practice. To accomplish a refueling, the ships were required to maneuver in very close proximity of each other, which was often complicated by high seas. The danger this presented coupled with the amount of time required, those opposed felt the evolution should only be accomplished in the event of an emergency. However, being unable to depend on friendly countries for supplies and provisions due to variety and quantity the fighting forces relied on afloat logistics. The Pacific Service Command reorganized into five major divisions consisting of Squadrons Two, Four, Six, Eight and Fleet Maintenance Office. Each one had its own commander, chief of staff, and appropriate administrative, communications, operations, supply and maintenance sections.¹⁶ They operated

in functions similar to the combat logistic fleets of today. The squadrons worked in unison to coordinate the transportation of vital stores, provisions, ammunitions, and perform repairs. Concepts of this era defined critical functions in a successful supply chain system and only allowed naval logistics to expand its capabilities. Concepts for sustainability became the cornerstone for successful operations. The function of managing logistics was relevant on the strategic stage of planning.

Supporting the 21st Century and Beyond

The world's security environment of today brings forth new challenges for America. The national interests remain the security of the United States and its citizens; a strong, and growing economy; respect for universal values at home and around the world; and an international order advance by U.S. leadership that promotes peace, and security.¹⁷ As the nation seeks to maintain the ability to protect those interests and shape the security environment into a safer place, application of all elements of national power is required. More importantly, that application must be accomplished in unison with the correct proportions.

Economics and security will always be linked together in regards to relative power. Commercial trade within the Pacific has experienced significant growth. Additionally, it is projected that by 2016 three of the world's top five economies will reside in the Asian Pacific area of operation. Given that ninety percent of the world's international commerce passes across the oceans, protecting the sea lines of communication is vital to the global economy.¹⁸ Ensuring that no one threatens the accessibility of critical chokepoints such as the Strait of Malacca, which enables around 40 percent of worldwide seaborne trade, is key to the National Security Strategy.

Although it will be a holistic government approach in securing the National Interests, it will hinge on the naval presence and hence the Supply Corps.

As outlined in the Defense Strategic Guidance, a “rebalance” towards the Asian Pacific region is mandated for the United States to maintain global influence and ensure economic stability. It is arguable that the nation never actually left the area of operation as the United States Pacific Command maintained a mission of promoting regional security and national interests. However, after fighting a two-front war on land in Iraq and Afghanistan for over a decade, this “rebalance” is needed to help refocus on the security concerns of tomorrow. How the ways and means are applied is critical as present and future budget constraints mandates strategic objectives be prioritized and streamlined. The United States military forces will no longer be sized to conduct large-scale, prolonged operations.¹⁹ Yet aligning the United States’ defense services to be as such so they are capable to deter and defeat any aggression from potential adversaries remains an overarching objective.

Joint Logistics

By focusing on the enhancement of a joint operating concept, the United States seeks to leverage the combined civilian agencies and military capabilities to create a scalable and ready force that is capable to respond to future demands on limited notice. Therefore, the role of Navy Supply Corps has expanded well beyond supporting the naval fleet and increased significantly in the joint environment. Military forces will need to operate across a full range of military operation. This will include providing lift, logistics, possibly medical supplies and security to Joint Interagency Intergovernmental Multinational organizations, host nations, and nongovernmental organizations.²⁰ Performing the tasks concurrently demands a disciplined

institution. Facing increased financial limitations will require much effort to collectively pool capabilities and seek sufficient ways of conducting business. As the business managers of the Navy, Supply Officers have the obligation to oversee assets, liabilities, and expenditures entrusted to them. Given the nature of the business, this is a constant struggle.

Focusing on the art and science of Supply Chain Management (SCM) is inherent at all levels of the Supply Corps. Although the warfighter is primarily concerned with the end product of what he or she requested, the Naval Supply Officer must strategize the larger picture and assess additional resource requests as well as anticipate future requirements. They look to improving areas such inventory cost and management as well as transportation cost and management. Reviewing the complete cycles from beginning to end and observing people, processes, and technology allows for continuous improvements and increased capabilities. Often, the details of logistics losses visibility at the strategic level due to emphasis on structuring the force required for future wars, which includes high dollar weapon systems and other matters. The Chief of Naval Operation's (CNO) *Sailing Directions and Navigation Plan for 2013-2017* and the Secretary of the Navy's *Navy Strategic Plan* outlines the Navy's contribution o the national defense. Their direction to maritime forces focuses on the key tenants of Warfighting First, Operate Forward, and Be Ready.²¹ Therefore, the functions of logistics managers include bridging any conceivable gaps. By balancing a business model approach and military demand, logistics manages seek to establish a system more proactive and strategic. SCM serves as an aide in creating the most efficient and ready forces.

Expeditionary Logistics and Maritime Prepositioning

The most visual aspect of supply is the timespan between when a requirement is realized and when the end product is delivered. Regardless of the physical location of a resource, and excluding budget and cost, the measurement of effectiveness in the customers' view is primarily derived in the ability to transport that resource from point A to point B. The combined use of aircraft, forward advanced bases cannot be overstated as they have been vital in past operations and will continue to provide a viable alternative. However, the anticipated mobile warfighting concepts that will be required in the future will depend highly on mobility. The power to exploit Operational Maneuver From the Sea will revolve around the effectiveness of expeditionary force. An expeditionary force is defined as an armed force organized to accomplish a specific objective in a foreign country.²² The ability to move and sustain those forces abroad is the primary mission of expeditionary logistics. One major customer to this form of logistics is the United States Marine Corps.

The United States Marine Corps has established itself as a scalable force and the model for joint operations via its Marine Air Ground Task Force (MAGTF) concept. Operating in support of the MAGTF requires a strategically logistical approach. The Department of Defense has invested significant resources in developing the capabilities that will allow the rapid deployment, assembly, command, projection, reconstitution, and re-employment of expeditionary forces from the sea.²³ Marine leadership has stressed openly a need to "return to their roots" of operating afloat. Additionally, Combatant Commander's demand for forward postured naval forces has grown 86 percent since 2007.²⁴ In order to sustain these forces, a comprehensive and integrated supply system

must be maintained. Leveraging the appropriate naval platforms and implementing a cohesive information system will maximize the supply chain's efficiency rate.

The Liberty Ships constructed in support of World War II were the product of a reaction. They were designed to be an inexpensive and expedient build. Little consideration was given to their practicability or lifespan. As a result many suffered structural defects thus compromised dependability and increased the hazards of operating afloat. Today the task of replenishment at sea is routine. It is a common scene to witness a supply ship delivering fuel, supplies and provision to multiple ships simultaneously. The three primary platforms of today's combat logistics force are T-AKE, T-AO and the T-AOE class auxiliaries. Although they have similar capabilities, they vary in regards to load space for consumables and fuel. So the force can be tailored to support the operational requirements.

In addition to auxiliary vessels, Military Sealift Command operates maritime prepositioning assets in support of the Army, Navy, Marine, Air Force, and Defense Logistics Agency. These cargo vessels offer the resourcefulness of large container transport as well as roll on/roll off capability. They have the capacity to accommodate a joint task force of 1400 personnel plus aircraft, boats, vehicle, UAVs and supporting medical and detainee handling spaces.²⁵ Ships of the USNS *Bob Hope* class are 950 feet in length, have the capacity of over 69,000 gross tons and operate at a top speed of 24 knots.²⁶ The Liberty Ships of World War II exhibited fractions of characteristics of today's ships. The mobility advantage gained by this form of sea basing adds to the flexibility of the force and also provides another level of operational security.

Force to Capability Balance

The force structure of today's Navy represents an institution capable of projecting a forward presence throughout the world. The ships are tasked with providing unparalleled sea power and sustained support to a variety of operations. It is vital to refine the lessons learned during the evolution of United States Navy Supply Corps by building upon the knowledge and concentrated capabilities that have been developed over time. Creating a navy that comprises of a large number of vessels will appear powerful. However, the efficiency in which they operate depends on continued innovation, preservations, and maintenance. Therefore, maintaining the very fleet that will support the warfighter becomes a strategic matter. Budget constraints have forced the Navy to alter construction and maintenance plans. Due to current sequestration, many planned maintenance schedules have been delayed or canceled. Other efficiencies that are the result of budget cutbacks include the accelerated decommissioning of various platforms including those that provide direct support for Marine operations and supply support.

Even with these drastic measures, the nation's financial state faced additional challenges with sequestration taken affect on March 1, 2013. Secretary of the Navy, The Honorable Ray Mabus, released ALNAV message 014/13 detailing the Navy's response to the sequestration. Among other actions the correspondence prescribed the lay up of four Combat Logistics Force units. In this status, the vessels are not under repair or actively employed. Due to many systems not operating during this time, skeleton crews perform the streamlined maintenance requirements. The normal scheduled preventative maintenance will not be accomplished and returning these vessels to a ready status will require a time consuming reactivation certification that varies depending on the length of

the lay up period. The message also enacted significant additional reductions for maintenance across the fleet and reprogramming of funds to support the efforts.

If were funding allocation is truly an indicator of what is viewed as important, it is clear that America values its weapon systems. The same arguments of what the Navy should look like in regards to aircraft, submarines, combatant ships, or aircraft carriers exist today just as they did during the early years. An investment in programs such as the Joint Strike Fighter shows the nation's persistence in optimizing its military forces. Even though by 2010 the price per aircraft had grown over 65 percent in its original estimate is 2002,²⁷ the program funding remains consistent even through sequestration. Other weapon platforms that are viewed as critical to the force structure of tomorrow's military, share the dedicated funding efforts similar to that of the Joint Strike Fighter. However, that same consistency is not experienced on logistical innovations that will support this modern fleet.

The needed modernization of information systems continually acts as a target to absorb budget reductions and thus implementation gets postponed further in times of fiscal constraints. The need for an updated information system has been debated for years. The current structure resides under the Naval Tactical Command Support System (NTCSS), which includes the Relational Administrative Data Management application (R-ADM), Organizational Maintenance Management System-Next Generation (OMMS-NG), the Naval Aviation Logistics Command Management Information System (NALCOMIS), and the Relational Supply (R-Supply). The later being the primary tool for Naval Supply Officers. By having the programs on one system, there is an advantage achieved in tracking maintenance, managing inventory, and financial data. However in

regards to R-Supply, these advantages are limited to internal operations. However, when requisitions have to be filled from external activities, the tracking information is limited depending on the priority of the material. If the requirement is submitted in support of a casualty report (CASREP) meaning that the part is needed to repair faulty equipment that prohibits the ship or unit from performing its intended mission, visibility is relatively high. Other requisitions such as general maintenance material or materials ordered for stock receive a lower priority. Until physical receipt is achieved, the last update on the requisitioned material is notification that the item(s) is being prepared for shipment and the mode of transportation.

As lower priority materials arrive at central logistics hubs for further transfer to the fleet, they are grouped and shipped on a manifest under one lead tracking number. Often the material can get separated and become lost during this process. Several factors can contribute to this inventory loss. Majority of the time it stems from miscommunication along the chain of end user, inventory control points, commercial carriers, storage activities, and repair contractors. Most if not all of the players utilize different information systems incompatible to the next. Tracking then becomes the compilation of spreadsheets passed from person to person in an attempt to maintain visibility of material.

It is not a secret that the technology exists that could be adapted to support military logistic requirements. Commercial businesses have leveraged the capabilities of automation and the Internet tremendously. The Navy Supply Corps' strategic vision recognizes that technology continues to outpace how information is presented and shared. In an effort to align its professionals with successful business practices, a fellowship program entitled "Training with Industry" was implemented. Through a selection

process, this 12-month fellowship partners junior supply officers with participating Fortune 500 companies to expand their supply chain and logistics education. These companies include major shipping organizations such as FedEx, which operates a tracking system that provide real time status. That information is readily available to the customer. Providing this capability to the Naval logistics corps and throughout the defense services would greatly efficiency, reduce duplication, and achieve cost savings. So while the education is being gained through the Training with Industry program, the ability to fully implement the practices are limited due to information systems within the Department of Defense.

Conclusion

Navy Supply has been present from the birth of the Navy. From this time its leaders and historical experiences have molded it. As the colonies sought to gain independence, the need to protect the homeland was priority. As the nations interests reached across the oceans into the global arena, the ability to safeguard those increased interests depended and will continue to depend on the ability to project power abroad. With the closing of a ten-year plus land war and a refocused strategy in the Asian Pacific area of operation, the Navy's role will be multiplied. The capabilities of the Navy Supply Corps will contribute to the success of the National Security and Defense Strategies. The successful innovations in joint, expeditionary logistics coupled with the study of Supply Chain Management greatly enhances the Navy Supply Corps outlook for future operations.

This paper does not suggest that the fate of the world relies on supply alone. If that were the case, other functions of warfighting would be obsolete. It does however imply

that the effectiveness of any operation will depend on logistical considerations and the timing in which they are addressed. It is important for not only for logical planning to be involved at all levels of war, but to remain engaged throughout. The Supply Chain Management system is functional and vital to successful operations, but areas for improvements remains to be capitalized. The information age has introduced new capabilities that can add efficiency and savings in a time when fiscal constraints dominate the conversation in politics and strategy.

Endnotes:

- ¹ Worrall R. Carter, *Beans, Bullets, and Black Oil*, (Navy War College Press, 1998), XXXI.
- ² Joint Staff, "Joint Publication 1-02." *Department of Defense Dictionary of Military and Associated Terms* 12, 2001, 297.
- ³ Joint Publication 1-02, 188.
- ⁴ T. Kasprzak. "Supply Has Been There Throughout History." *Navy Supply Corps Newsletter* 73, no. 2 (March-April 2010): 12.
- ⁵ Frank J. Allston, *Ready for Sea: The Bicentennial History of the US Navy Supply Corps* (Naval Institute Press, 1995), 8.
- ⁶ Allston, 5.
- ⁷ Allston, 5.
- ⁸ Allston, 6.
- ⁹ Allston, 6.
- ¹⁰ Nathan Miller, *Sea Of Glory: The Continental Navy Fights for Independence 1175-1783*, (David McKay Company, Inc.), 281.
- ¹¹ Allston, 23.
- ¹² Allston, 21.
- ¹³ Allston, 46.
- ¹⁴ Allston, 80.
- ¹⁵ Allston, 115.
- ¹⁶ Carter, 10.
- ¹⁷ White House, "National Security Strategy." *Washington, DC* , 2010. 7.
- ¹⁸ Cooperative Strategy for the 21st Century (October 2007), p. 5
- ¹⁹ U.S. Department of Defense, *Sustaining Global Leadership: Priorities for 21st Century Defense*. (Washington, DC: January 2012), 6.
- ²⁰ Naval Supply Systems Command, *The Supply Corps 2040 Strategic Vision Study* (Mechanicsburg, PA, 2010), 92.
- ²¹ Naval Supply Systems Command, *Strategic Plan 2013-2017* (Mechanicsburg, PA, 2013), 1.
- ²² Joint Publication 1-02, 112.
- ²³ Robert W. Button et. Al., *Maritime Prepositioning Force (Future) Capability Assessment: Planned and Alternative Structures*. Santa Monica, CA: RAND Corporation, 2010, 1.

²⁴Burt. "A Middleweight Force, Rethinking Global Logistics." *Navy Supply Corps Newsletter* 75, no. 5 (September-October 2012): 12.

²⁵ Button, 48.

²⁶ Stephen Saunders, ed. *Jane's Fighting Ships 2010-2011*. (Alexandria, VA: Jane's Information Group Inc. 2010), 247.

²⁷ "JSF Price Tag Now \$112 Million Per Plane; Program \$382 Billion," Greg Grant, accessed 3 April 2013.

Bibliography

- Allston, F. J. *Ready for Sea: The Bicentennial History of the US Navy Supply Corps* Naval Institute Press, 1995.
- Anderson, G. *Beyond Mahan: Proposal for a US Naval Strategy in the Twenty-First Century* (1993).
- Born, T. J. *Navy Logistics Over the Shore: A Capability Worth Retaining* (1998).
- Button, R. W., IV Gordon, D. Hoffmann, J. Riposo, and P. A. Wilson. *Maritime Prepositioning Force (Future) Capability Assessment: Planned and Alternative Structures*. Santa Monica, CA: RAND Corporation, 2010.
- Burt. "A Middleweight Force, Rethinking Global Logistics." *Navy Supply Corps Newsletter* 75, no. 5 (September-October 2012).
- Button, R. W., IV Gordon, D. Hoffmann, J. Riposo, and P. A. Wilson. *Maritime Prepositioning Force (Future) Capability Assessment: Planned and Alternative Structures* (2010).
- Corps, U. S. M. "Marine Corps Doctrinal Publication (MCDP) 3." Expeditionary Operations, *Quantico, Virginia, Marine Corps Combat Development Command*, 1997.
- Corps, U. S. M. "Marine Corps Doctrinal Publication (MCDP) 4." *Warfighting, Quantico, Virginia, Marine Corps Combat Development Command*, 1997.
- House, W. "National Security Strategy." *Washington, DC* , 2010.
- Kasprzak, T. "Supply Has Been There Throughout History." *Navy Supply Corps Newsletter* 73, no. 2 (March-April 2010).
- Mahan, A. T., and J. B. Hattendorf. *Mahan on Naval Strategy: Selections from the Writings of Rear Admiral Alfred Thayer Mahan* Naval Institute Press, 1991.
- Miller, N, *Sea Of Glory: The Continental Navy Fights for Independence 1175-1783*, David McKay Company, Inc., New York, 1974.
- Moore, C. W. and E. Hanlon. "Sea Basing: Operational Independence for a New Century." *Proceedings-United States Naval Institute* 129, no. 1; ISSU 1 (2003).
- Naval Supply Systems Command, *The Supply Corps 2040 Strategic Vision Study*, Mechanicsburg, PA, 2010.
- Naval Supply Systems Command, *Strategic Plan 2013-2017*, Mechanicsburg, PA, 2013.
- Saunders, Stephen, ed. *Jane's Fighting Ships 2010-2011*. Alexandria, VA: Jane's Information Group Inc., 2010.
- Silverstone, P. H. "The Sailing Navy, 1175-1854." Naval Institute Press, 2001.
- Staff, J. "Joint Publication 1-02." *Department of Defense Dictionary of Military and Associated Terms* 12, 2001.
- Zwolensky, T. S. *Deployment Logistics and the Impact of Seabasing: An Army Perspective* (2010).